



Air Quality Compliance For Wood Furniture Manufacturing Operations

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This fact sheet was developed to assist Michigan businesses with the air quality compliance requirements of the Wood Furniture Manufacturing Operations National Emission Standard for Hazardous Air Pollutants (NESHAP).

INTRODUCTION

One of the goals of the Clean Air Act Amendments of 1990 (CAAA) is to reduce the emissions of hazardous air pollutants (HAPs). Control of HAPs is achieved through the promulgation of emission standards for specific source categories of sources that emit HAPs.

As required by Section 112 of the CAAA, the United States Environmental Protection Agency (EPA) developed a list of 189 HAPs, identified 174 categories of sources that account for the majority of the releases, and developed a timetable for promulgating standards. These federal standards are referred to as National Emission Standards for Hazardous Air Pollutants (NESHAP).

The NESHAP for Wood Furniture Manufacturing Operations was proposed in the Federal Register on December 6, 1994, and the final rule was promulgated on December 7, 1995. The purpose of this publication is to explain who is subject to the requirements, what the requirements are and when compliance must be achieved. A glossary has been provided at the end of this document to assist in understanding some of the technical terms and concepts (appearing in **boldface** text) discussed in this fact sheet. This fact sheet is to be used only as a guide and is not a substitute for reading and understanding the final rule which is found in the Federal Register notice published December 7, 1995 (pages 62930-62962). The notice will be published in Title 40, Part 63 Subpart JJ of the Code of Federal Regulations (40 CFR 63). For a copy of the Federal Register notice, see the "Where To Go For Additional Information" section, page 16. The regulation itself consists of work practice standards, recordkeeping requirements, reporting requirements, and emission limits for **finishing materials, contact adhesives and strippable spray booth coverings**. However, **aerosol adhesives** and contact adhesives applied to nonporous substrates are not covered by this standard.

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APPLICABILITY OF THE FINAL RULE

Facilities affected by this standard are **major sources** that manufacture **wood furniture** or **wood furniture components**. A major source is defined as having the potential to emit 10 tons per year of one hazardous air pollutant (HAP) or 25 tons per year of all HAPs combined. A facility that does not meet the criteria of a major source is considered an area source. *Table 1* lists wood furniture SIC codes that are affected by this regulation. *Figure 1* is a flow diagram to help determine whether or not a facility is subject to the NESHAP for Wood Furniture Manufacturing Operations. Included in the diagram are the following facilities which are **not** subject to this NESHAP:

- **Incidental furniture manufacturers**, which are facilities that use no more than 100 gallons per month of wood furniture coatings and adhesives but are a major source due to other operations. These facilities must keep purchase or usage records to prove that they do not use more than 100 gallons per month of wood furniture coatings and adhesives.
- Wood furniture manufacturing facilities that use either 250 gallons or less per month **or** up to 3,000 gallons per rolling 12-month period of all finishing materials, adhesives, and **cleaning and washoff** materials, including materials used for processes other than wood furniture manufacturing. However, 90% of the annual HAP emissions from the facility must come from finishing materials, adhesives and cleaning and washoff solvents. Monthly usage records must be maintained to demonstrate that the limit is being met (records for one year before the compliance date are necessary to demonstrate compliance with the 3,000 gallon per rolling 12-month period limit).
- Facilities whose wood furniture manufacturing operations contribute to at least 90% of plantwide emissions per rolling 12-month period and that use materials containing no more than 5 tons of any one HAP, or 12.5 tons of any combination of HAPs per rolling 12-month period including materials from processes other than wood furniture manufacturing. Usage records, **certified product data sheets (CPDS)**, and any other records documenting emissions from all source categories other than wood furniture manufacturing must be kept on file to demonstrate that annual emissions do not exceed these levels.
- Research or laboratory facilities.

COMPLIANCE DATES

The compliance date for each facility subject to the NESHAP depends on two criteria: whether the facility is existing or new and on the actual amount of HAPs emitted. An **existing source** is defined as one that was constructed or **reconstructed** on or before December 6, 1994. A **new source** is one that is constructed or reconstructed after December 6, 1994. Existing major sources that emitted less than 50 tons of HAPs in 1996 must be in compliance by December 7, 1998. Existing major sources that emitted 50 tons or more of HAPs in 1996 must comply by November 21, 1997. Existing **area sources** that become major sources have one year after becoming a major source to comply with the rule. New major sources must comply immediately upon startup or by December 7, 1995, whichever is later. New area sources that become major sources must be in compliance immediately upon becoming a major source. These compliance dates are summarized in *Table 2*.

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Table 1. Wood Furniture SIC Codes

| SIC CODE | INDUSTRY | TYPICAL PRODUCTS |
|----------|--|--|
| 2434 | Wood kitchen cabinets | Cabinets (to be built-in or factory made), vanities |
| 2511 | Wood household furniture | Beds, bookcases, chairs, dressers, stools, tables, etc. |
| 2512 | Upholstered household furniture | Chairs, sofas |
| 2517 | Wood television and radio cabinets | Television stereo and sewing machine cabinets |
| 2519 | Household furniture, not elsewhere classified (nec) | Bassinets; reed, rattan, and other wicker furniture; garden and lawn furniture |
| 2521 | Wood office furniture | Desks, filing cabinets, bookcases, chairs |
| 2531 | Public building and related furniture | Benches, bleachers, church furniture, seats in transportation vehicles |
| 2541 | Wood partitions and fixtures | Shelves, lockers, office and store fixtures, and prefabricated partitions if attached to the floor |
| 2599 | Furniture and fixtures, not elsewhere classified (nec) | Furniture for hospitals, restaurants, bars, bowling centers, and ships |
| 5712 | Furniture stores | Custom made furniture |

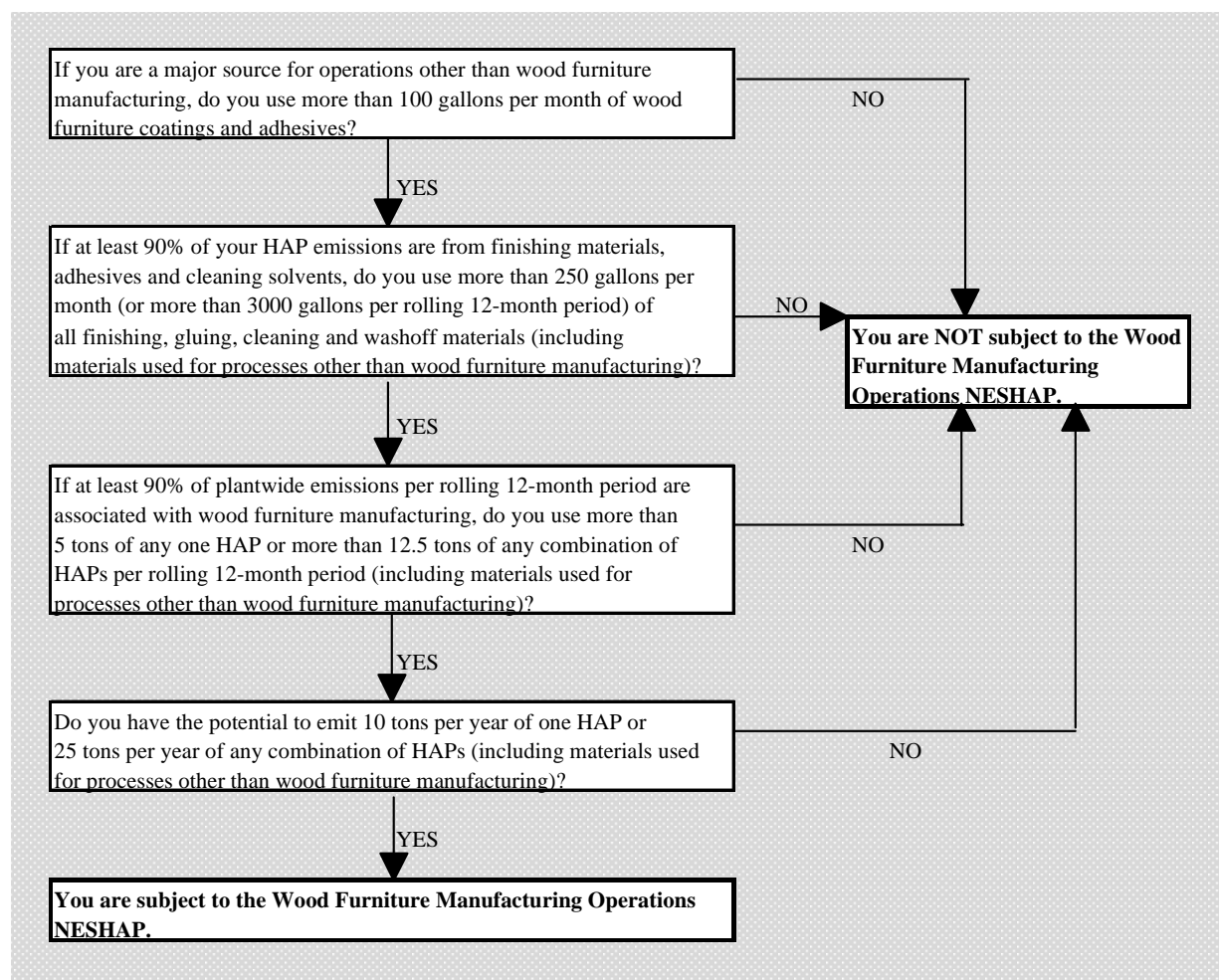


Figure 1. Applicability Flow Diagram

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Table 2. Compliance Dates

| TYPE OF FACILITY | COMPLIANCE DATES |
|---|--|
| Existing major source (on or before 12-6-94) that emitted less than 50 tons of HAPs in 1996 | December 7, 1998 |
| Existing major source (on or before 12-6-94) that emitted 50 tons or more of HAPs in 1996 | November 21, 1997 |
| Existing area source (on or before 12-6-94) that becomes a major source | 1 year after becoming a major source |
| New major sources (after 12-6-94) | December 7, 1995 or upon startup |
| New area source (after 12-6-94) that becomes a major source | Immediately upon becoming a major source |

WORK PRACTICE STANDARDS

All facilities subject to this NESHAP must comply with the work practice standards' portion of the regulation. There are 12 components to the work practice standards including a work practice implementation plan; operator training program; an inspection and maintenance plan; a cleaning and washoff solvent accounting system; chemical composition requirements; spray booth cleaning requirements; storage requirements; application equipment requirements; line cleaning requirements; gun cleaning requirements; washoff operation requirements; and a formulation assessment plan for finishing operations. The requirements for each of these components are described below.

1. Work practice implementation plan

Develop a work practice implementation plan that defines how the other 11 work practice standards are to be implemented. This plan should include the operator training program, the inspection and maintenance plan, and the formulation assessment plan for finishing operations (these three plans are described below). The work practice implementation plan must be developed within 60 days after the compliance date.

2. Operator training program

Train all personnel who are involved in finishing, gluing, cleaning and washoff operations; use of manufacturing equipment or implementation of the requirements of this regulation. New personnel (those hired after the compliance date) must be trained upon hiring. Existing personnel (those hired before the compliance date) must be trained within six months of the compliance date. All personnel must be given annual refresher training. The operator training program must include the following:

- A list of all current personnel by name and job description that are required to be trained;
- An outline of subjects to be covered in the initial and refresher training;
- Lesson plans for the initial and refresher training that includes application techniques, cleaning and washoff procedures, equipment setup and adjustment, and management of cleanup wastes; and

- A description of how the facility will document that personnel have successfully completed the training program.

3. Inspection and maintenance plan

Prepare a written inspection and maintenance plan that will address equipment leaks. Each facility is required, at least once a month, to visually inspect all equipment used to transfer or apply finishing materials, adhesives or organic solvents to ensure that there are no leaks. The inspection and maintenance plan should specify the following:

- An inspection schedule;
- A method for documenting the date and results of each inspection and any repairs that were made; and
- A timeframe between identifying a leak and making the repair. A first attempt at repair must be made no later than five days after the leak is detected. Final repairs must be made within 15 days after the leak is detected unless the leaking equipment is going to be replaced, in which case the repairs must be completed within 3 months.

4. Cleaning and washoff solvent accounting system

Develop an accounting system to record the quantity and type of organic solvent used each month for washoff and cleaning to include: the number of pieces washed off and the reason for the washoff; the quantity of spent solvent generated from each washoff and cleaning operation each month; and whether the solvent is recycled onsite or disposed offsite.

5. Chemical composition requirements

Do not use cleaning and washoff solvents that contain any of the pollutants listed in *Table 4* of the rule [63.803] in concentrations greater than 1% for noncarcinogenic volatile hazardous air pollutants (VHAPs), or greater than 0.1% for carcinogenic VHAPs as required for reporting on all material safety data sheets (MSDS).

6. Spray booth cleaning requirements

To clean spray booth components other than conveyors, continuous coaters and their enclosures, or metal filters, do not use compounds containing more than 8% by weight of volatile organic compounds (VOCs) unless the booth is being refurbished. If the spray booth is being refurbished (the coating or other protective material used to cover the booth is being replaced) do not use more than 1.0 gallon of organic solvent per booth to prepare the surface of the booth prior to applying the booth coating.

7. Storage requirements

Store finishing, gluing, cleaning, and washoff materials in **closed containers**.

8. Application equipment requirements

Only use **conventional air spray** guns to apply finishing materials under the following circumstances:

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- To apply finishing materials that have a VOC content no greater than 1.0 pound VOC per pound of solids, as applied;
- For touchup and repair only if (1) the touchup and repair occurs after completion of the finishing operation; or (2) if the touchup and repair occurs after the application of stain and before the application of any other type of finishing material, and the materials used for touchup and repair are applied from a container that has a volume of no more than 2.0 gallons;
- When spray is automated;
- When emissions from the finishing application station are directed to a control device;
- The conventional air gun is used to apply finishing materials and the cumulative total usage of that finishing material is no more than 5% of the total gallons of finishing materials used during that semiannual period; or
- The gun is used to apply stain on a part when it is technically or economically infeasible to use any other spray application technology. Documentation must be used to support the claim of technical or economic infeasibility.

9. Line cleaning requirements

Pump or drain all the organic solvent used for line cleaning into a closed container.

10. Gun cleaning requirements

Collect the organic solvent used to clean spray guns in a closed container.

11. Washoff operation requirements

Control the emissions from washoff operations by using closed tanks for washoff and tilting or rotating the part to drain as much solvent as possible.

12. Formulation assessment plan for finishing operations

Prepare a formulation assessment plan for finishing operations to keep track of volatile hazardous air pollutants (VHAPs). VHAPs discussed in this section are only those listed in *Table 3* (*Table 5* of the rule [63.803]) and are called VHAPs of potential concern. The formulation assessment plan for finishing operations should do all of the following:

- Identify the VHAPs from *Table 3* that are being used in finishing operations.
- Establish a baseline level of usage for each VHAP used at the facility. The baseline usage level is the highest annual usage from 1994, 1995, or 1996 for each VHAP.
- Track the annual usage of each VHAP that is present in amounts greater than 1% for noncarcinogenic VHAPs or greater than 0.1% for carcinogenic VHAPs as required, or reporting on all material safety data sheets (MSDS).

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- If after November 1998, the annual usage of VHAP exceeds its baseline level, provide a written notification to the Michigan Department of Environmental Quality (MDEQ) that describes the amount of the increase and explains the reason(s) for exceedance of the baseline level.
- If after November 1998, a facility uses a VHAP of potential concern for which a baseline level has not been previously established, then the baseline level shall be established as the de minimis level.

Table 3. List of VHAPs of Potential Concern Identified by Industry

| CHEMICAL | CAS No. | EPA DE MINIMIS, TONS/YR |
|-----------------------|---------|-------------------------|
| Dimethyl formamide | 68122 | 1.0 |
| Formaldehyde | 50000 | 0.2 |
| Methylene chloride | 75092 | 4.0 |
| 2-Nitropropane | 79469 | 1.0 |
| Isophorone | 78591 | 0.7 |
| Styrene monomer | 1000425 | 1.0 |
| Phenol | 108952 | 0.1 |
| Diethanolamine | 11422 | 5.0 |
| 2-Methoxyethanol | 109864 | 10.0 |
| 2-Ethoxyethyl acetate | 111159 | 5.0 |

EMISSION LIMITS

This NESHAP contains emission limits for finishing operations, contact adhesives and strippable spray booth coatings. *Table 4* lists the emission limits that must be met depending on which of the various compliance options are selected, and whether it is an existing or new facility. For finishing operations there are four compliance options, for contact adhesives there are two compliance options, and for strippable spray booth coatings there is only one option for compliance. A facility with finishing operations can comply by using (1) an averaging approach, (2) compliant finishing materials, (3) a control system, or (4) any combination of an averaging approach, compliant finishing materials, and control system. For contact adhesives a facility can comply by using compliant materials or a control system. For strippable spray booth coatings compliant materials must be used.

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Table 4. Summary of Emission Limits

| EMISSION POINT | EXISTING SOURCE | NEW SOURCE |
|--|-----------------|------------|
| FINISHING OPERATIONS COMPLIANCE OPTIONS | | |
| (a) Achieve a weighted average VHAP content across all coatings (maximum lb VHAP/lb of solids, as applied) | 1.0 | 0.8 |
| (b) Use compliant finishing materials (maximum lb VHAP/lb of solids, as applied) | | |
| • stains | 1.0 | 1.0 |
| • washcoats | 1.0 | 0.8 |
| • sealers | 1.0 | 0.8 |
| • topcoats | 1.0 | 0.8 |
| • basecoats | 1.0 | 0.8 |
| • enamels | 1.0 | 0.8 |
| • thinners (maximum % HAP allowable) | 10.0 | 10.0 |
| (c) Use a control device (lb VHAP emitted/lb solids used) | 1.0 | 0.8 |
| (d) Use any combination of (a), (b), and (c) | 1.0 | 0.8 |
| CONTACT ADHESIVES COMPLIANCE OPTIONS | | |
| (a) Use compliant contact adhesives (maximum lb VHAP/lb of solids, as applied) | | |
| • Foam adhesives used in products that meet flammability requirements | 1.8 | 0.2 |
| • For all other contact adhesives (including foam adhesives used in products that do not meet flammability requirements) | 1.0 | 0.2 |
| (b) Use a control device (lb VHAP emitted/lb of solids used) | 1.0 | 0.2 |
| STRIPPABLE SPRAY BOOTH MATERIAL | | |
| Strippable spray booth coatings (maximum lb VOC/lb solids) | 0.8 | 0.8 |

Notice that the emission limits in *Table 4* are expressed as pounds of VHAP per pound of solids, as applied. To determine the pounds of VHAP per pound of solids for each material, use the following steps:

- 1) Identify all the VOCs used in the facility. Determine the percent weight of each VOC. This information can usually be found on the certified product data sheet (CPDS). Calculate the total percent weight of all the VOCs

| VOCs | (%) Weight |
|------------------------|------------|
| Xylene | 14.2 |
| Cyclohexanone | 4.6 |
| Toluene | 16.8 |
| Methyl isobutyl ketone | 23.5 |
| Isopropyl alcohol | 3.2 |
| TOTAL | 62.3% |

- 2) Determine which VOCs are VHAPs. Calculate the total percent weight of all the VHAPs*.

| VHAPs | (%) Weight |
|------------------------|------------|
| Xylene | 14.2 |
| Toluene | 16.8 |
| Methyl isobutyl ketone | 23.5 |
| TOTAL | 54.5 % |

* See the "Where to Go for Additional Information" section for a list of VHAPs.

3) Calculate the total percent weight of solids of all the VHAPs in each raw material.

$$\begin{aligned}\text{Percent weight of solids} &= \text{total percent weight} - \text{total percent weight of VOCs} \\ &= 100\% - 62.3\% \\ &= 37.7\%\end{aligned}$$

4) Calculate the pounds of VHAP per pound of solids to determine compliance with the NESHAP emission limits.

$$\begin{aligned}\text{Percent weight of VHAPs} \div \text{percent weight of solids} &= \text{pounds of VHAPs per pounds of solids} \\ 54.5\% \div 37.7\% &= 1.44 \text{ pounds of VHAPs per pounds of solids}\end{aligned}$$

COMPLIANCE METHODS

As stated above, there are four different options for meeting the emission limits for finishing operations, two different options for meeting the emission limits for contact adhesives, and only one choice for meeting the emission limit for strippable spray booth coatings. Below is a description of each of these options.

FINISHING OPERATIONS

Option 1: Averaging Approach

Use an averaging approach so that the average VHAP content for all finishing materials used at the facility is no greater than 1.0 lb VHAP/lb of solids, as applied for existing sources, and no greater than 0.8 lb VHAP/lb of solids, as applied for new sources. See Equation 1 in the calculation section on page 10 to calculate the VHAP content.

Option 2: Compliant Materials

Use compliant coatings and thinners (those that meet the emission limits in *Table 2*). Each washcoat, basecoat and enamel that is formulated onsite by thinning another finishing material must be formulated using a finishing material containing no more than 1.0 lb VHAP/lb of solids for existing sources (no more than 0.8 lb VHAP/lb of solids for new sources), and a thinner containing no more than 3% VHAP by weight.

When using **continuous coaters** to apply compliant materials, choose one of the following:

- Use compliant coatings as determined by the VHAP content of the coating in the reservoir, and the VHAP content as calculated from records and use compliant thinners; or
- Use compliant coatings as determined by the VHAP content of the coating in the reservoir, use compliant thinners, and maintain a viscosity of the coating in the reservoir that is no less than the viscosity of the initial coating. Monitor the viscosity with a viscosity meter, or by testing the viscosity of the initial coating and retesting the coating in the reservoir each time solvent is added.

Option 3: Control System

Use a control system with an overall control efficiency so that the emissions are no greater than 1.0 lb VHAP/lb of solids for existing sources and no greater than 0.8 lb VHAP/lb of solids for new sources. See Equation 2 in the calculation section on page 10 to determine the overall control efficiency. This option requires facilities to conduct an initial performance test, and to calculate each operating parameter value that demonstrates compliance with the NESHAP as the arithmetic average of the maximum or minimum, as appropriate, of three test runs.

Option 4: Combination of Compliance Methods

Use any combination of an averaging approach, compliant finishing materials, and a control system.

CONTACT ADHESIVES

Option 1: Compliant Materials

For existing sources using contact **foam adhesives** in products meeting flammability requirements, use foam adhesives with a VHAP content no greater than 1.8 lb VHAP/lb of solids, as applied.

For all other contact adhesives, use compliant adhesives with a VHAP content no greater than 1.0 lb VHAP/lb of solids, as applied for existing sources, or no greater than 0.2 lb VHAP/lb of solids, as applied, for new sources.

Option 2: Control System

Use a control system with an overall control efficiency so that the VHAP emissions are no greater than 1.0 lb VHAP/lb solids for existing sources, and no greater than 0.2 lb VHAP/lb solids for new sources. See Equation 3 in the calculation section on page 9 to determine the overall control efficiency. This option requires facilities to conduct an initial performance test and to calculate each operating parameter value that demonstrates compliance with the NESHAP as the arithmetic average of the maximum or minimum, as appropriate, of three test runs.

STRIPPABLE SPRAY BOOTH COATINGS

The only option for strippable spray booth coatings is to use a coating with no more than 0.8 lb VOC/lb solids.

PERFORMANCE TEST METHODS/CALCULATIONS

There are specific performance test methods that must be used when calculating or otherwise determining certain parameters such as the VHAP content of the liquid coating. Consult the actual rule [63.805] for these required performance test methods.

- ☐ Use Equation 1 to calculate the VHAP content if using compliance Option 1 for finishing materials.

$$\text{Eqn 1: } E = (M_{c1}C_{c1} + M_{c2}C_{c2} + \dots + M_{cn}C_{cn} + S_1W_1 + S_2W_2 + \dots + S_nW_n) \div (M_{c1} + M_{c2} + \dots + M_{cn})$$

Where:

| | | |
|----------------|---|---|
| E | = | emission limit (lb VHAP/lb solids) |
| M _c | = | mass of solids in the finishing material (c) (lb solids/month) |
| C _c | = | VHAP content of the finishing material (c) (lb VHAP/lb solids, as supplied) |
| S | = | VHAP content of a solvent added to finishing materials, expressed as a weight fraction |
| W | = | amount of solvent added to finishing materials during the monthly averaging period (lb) |
| n | = | number of finishing materials used |

- ☐ Use Equation 2 to determine the overall control efficiency if using compliance Option 3 for finishing operations.

$$\text{Eqn 2: } R = [(E_{bc} - E_{ac}) / E_{bc}] (100)$$

Where:

| | | |
|-----------------|---|--|
| R | = | the overall efficiency of the control system |
| E _{bc} | = | emissions before the control system is installed and operated, calculated using Equation 1 (lb VHAP/lb solids) |
| E _{ac} | = | emissions after the control system is installed and operated (lb VHAP/lb solids) |

- ☐ Use Equation 3 to determine the overall control efficiency when using compliance Option 2 for contact adhesives.

$$\text{Eqn 3: } R = [(G_{bc} - G_{ac}) / G_{bc}](100)$$

Where:

| | | |
|-----------------|---|--|
| R | = | the overall efficiency of the control system |
| G _{bc} | = | VHAP content of the contact adhesive before the control system is installed and operated (lb VHAP/lb solids) |
| G _{ac} | = | VHAP content of the contact adhesive after the control system is installed and operated (lb VHAP/lb solids) |

RECORDKEEPING REQUIREMENTS

Every facility subject to the Wood Furniture Manufacturing Operations NESHAP must perform recordkeeping. The records that must be maintained by all facilities regardless of compliance method include certified product data sheets (CPDS) for each material, VHAP content for each material (VOC content for strippable spray booth coatings), work practice standard records, and information submitted with reports. Additionally, facilities using an averaging approach, continuous coaters to apply compliant coatings, and/or a control system as a compliance method have additional recordkeeping requirements. *Table 5* lists these additional requirements and summarizes all of the necessary recordkeeping.

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Table 5. Summary of Recordkeeping Requirements

| RECORDKEEPING REQUIREMENTS FOR ALL COMPLIANCE METHODS | | |
|--|--|---|
| ◆ | Certified product data sheet (CPDS) for each finishing material, thinner, contact adhesive and strippable spray booth coating | |
| ◆ | VHAP content (lb VHAP/lb solids, as applied) for each finishing material and contact adhesive [VOC content (lb VOC/lb solids, as applied) for strippable spray booth coatings] | |
| ◆ | Information submitted in reports | |
| ◆ | Work practice standard recordkeeping | |
| | – Operator training program records | |
| | – Inspection and maintenance plan records | |
| | – Cleaning solvent accounting system records | |
| | – Records showing total finishing materials usage and the percentage of finishing materials applied with conventional air spray guns | |
| | – Formulation assessment plan records | |
| | – All work practice implementation plan records | |
| ADDITIONAL RECORDKEEPING REQUIREMENTS FOR CERTAIN COMPLIANCE METHODS | | |
| OPERATION | COMPLIANCE METHOD | RECORDKEEPING REQUIREMENTS |
| Finishing materials | Averaging approach | Usage records of coatings and thinners |
| | | Averaging calculation for each month |
| | Compliant coatings using continuous coaters | Solvent and coating additions to reservoir |
| | | Viscosity measurements |
| | | Data demonstrating that viscosity is an appropriate parameter for demonstrating compliance |
| | Control system | Calculations demonstrating that the overall control efficiency results in the required value of E _{ac} |
| | | Operating parameter values |
| Contact adhesives | Control system | Calculations demonstrating that the overall control efficiency results in the required value of G _{ac} |
| | | Operating parameter values |

REPORTING REQUIREMENTS

There are three reporting requirements for facilities subject to the Wood Furniture Manufacturing NESHAP: an initial notification report, an initial compliance status report, and continuous compliance status reports.

INITIAL NOTIFICATION REPORT

Each facility that is subject to the NESHAP must submit an initial notification report to let the Michigan Department of Environmental Quality, Air Quality Division know that the regulation applies to the facility. The initial notification report is due September 2, 1996 for existing sources and within 120 days of startup for new sources (see *Table 6*).

INITIAL COMPLIANCE STATUS REPORT

The initial compliance status report is used to indicate that the facility is meeting all of the requirements of the rule. The specific content requirements for the initial compliance status report depend on the facility's compliance method. Calculations

and statements of compliance are usually required for this report. *Table 7* summarizes the content requirements for initial compliance status reports for each compliance method. The initial compliance status report must be submitted no later than 60 days after the compliance date (see *Table 6* for submittal dates).

CONTINUOUS COMPLIANCE STATUS REPORTS

Continuous compliance status reports indicate whether or not the facility is in compliance with all the requirements of the NESHAP for each six month period. The content of the continuous compliance status reports includes statements that the facility is in compliance or identification of dates of noncompliance. Additional information may also be required for the continuous compliance status reports depending on the facility's compliance method. *Table 7* summarizes the content requirements for continuous compliance status reports for each compliance method. The first continuous compliance status report is due within 30 days of the 6 month period following the compliance date (see *Table 6* for the actual dates). Subsequent reports are due within 30 days after each 6 month reporting period. For example, a facility with a compliance date of 12-7-98 would have to submit its first continuous compliance status report by 7-7-99. Subsequent reports must be submitted by 1-7-00, 7-7-00, etc.

Table 6. Reporting Submittal Dates

| TYPE OF FACILITY | INITIAL NOTIFICATION REPORT | INITIAL COMPLIANCE STATUS REPORT | CONTINUOUS COMPLIANCE STATUS REPORTS |
|---|-----------------------------|----------------------------------|--------------------------------------|
| Existing source (on or before 12-6-94) that emitted less than 50 tons of HAPs in 1996 | 9-2-96 | 2-5-99 | 7-7-99, then every 6 months |
| Existing source (on or before 12-6-94) that emitted 50 tons or more of HAPs in 1996 | 9-2-96 | 1-20-98 | 6-20-98, then every 6 months |
| New sources (after 12-6-94) | 120 days after startup | 2-5-96 or 60 days after startup | 7-7-96, then every 6 months |

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Table 7. Compliance Report Content Requirements

| COMPLIANCE METHOD | INITIAL COMPLIANCE REPORT CONTENT | CONTINUOUS COMPLIANCE STATUS REPORT CONTENT |
|--|---|---|
| Averaging approach | Statement that the facility has developed and implemented the work practice implementation plan. | Statement that during the reporting period, the work practices were followed in accordance with the work practice implementation plan and the inspection and maintenance plan. |
| | Averaging calculation for month in which compliance date fell. | Statement that the facility has met the emission limits every month by using an averaging approach. |
| | | Averaging calculation for each month in reporting period. |
| | | Identification of dates and reasons for noncompliance. |
| Compliant materials | Statement that the facility has developed and implemented the work practice implementation plan. | Statement that during the reporting period, the work practices were followed in accordance with the work practice implementation plan and the inspection and maintenance plan. |
| | Statement that the facility is using compliant coatings, thinners, and/or contact adhesives. | Statement that compliant coatings, thinners, and/or contact adhesives were used each day in the reporting period. |
| | | Identification of dates and reasons for noncompliance. |
| Continuous coaters used to apply compliant materials | Statement that the facility has developed and implemented the work practice implementation plan. Statement that the facility is using either: (1) compliant materials as determined by the VHAP content of the coating in the reservoir and the calculated VHAP content, and compliant thinners; or (2) compliant coatings, thinners and monitoring the viscosity of the coating in the reservoir [also attach data demonstrating the relationship between viscosity and VHAP content of the coating]. | Statement that during the reporting period, the work practices were followed in accordance with the work practice implementation plan and the inspection and maintenance plan. |
| | | Statement that either: (1) compliant coatings (as determined by the VHAP content of the coating in the reservoir and the VHAP content of the coating as calculated from records) and compliant thinners were used each day in the reporting period; or (2) compliant coatings (as determined by the VHAP content of the coating in the reservoir) and compliant thinners were used each day in the reporting period, and the viscosity of the coating in the reservoir has not been less than the viscosity of the initial coating. |
| | | Identification of dates and reasons for noncompliance. |
| Control system | Statement that the facility has developed and implemented the work practice implementation plan. | Statement that during the reporting period, the work practices were followed in accordance with the work practice implementation plan and the inspection and maintenance plan. |
| | Monitoring plan identifying each operating parameter to be monitored, and why each parameter is appropriate for demonstrating compliance. | Statement that capture or control devices have not been operated at daily average values greater than or less than (as appropriate) the operating parameter values established in the initial performance test. |
| | Results of initial performance test. | Identification of dates and reasons for noncompliance. |
| Combination of compliance methods | Content requirements for each method used. | Content requirements for each method used. |

HOW DOES THE NESHAP FINAL RULE RELATE TO OTHER RULES?

Wood furniture manufacturing facilities are also subject to several state rules. Rule 602 and Rule 702 of the Michigan Administrative Rules for Air Pollution Control apply to existing and new sources of VOC emissions, respectively. Other rules that may apply include Michigan Rule 220 that regulates the construction of major offset sources and major offset modifications proposed for location within nonattainment areas, and Michigan Rule 230 that regulates air toxics. Wood furniture manufacturing facilities must operate in compliance with both the NESHAP final rule and all applicable state rules.

ARE AIR PERMITS REQUIRED?

There are two differing yet related air permit programs of which owners of wood furniture manufacturing facilities should be aware of: The Permit to Install Program and the Renewable Operating Permit Program. Both programs are administered by the Air Quality Division of the Michigan Department of Environmental Quality (MDEQ). The Air Quality Management Division of the Wayne County Department of Environment administers the permit programs for sources located in Wayne County.

PERMIT TO INSTALL (NEW SOURCE REVIEW) PROGRAM

Rule 201 of the Michigan Administrative Rules for Air Pollution Control requires a facility to obtain an air use permit prior to installation, relocation or modification of a process that may emit air contaminants. Owners of wood furniture manufacturing operations that need a permit or have permitting questions should contact the MDEQ Air Quality Division.

RENEWABLE OPERATING PERMIT PROGRAM

Title V of the CAAA requires each state, under guidance from EPA, to develop a Renewable Operating permit program. All major sources must apply for a Renewable Operating permit. Therefore, every facility subject to the Wood Furniture Manufacturing Operations NESHAP must apply for a Renewable Operating permit. The Renewable Operating permit submittal due date for most facilities subject to the Wood Furniture Manufacturing Operations NESHAP (SIC codes 2511, 2512, 2517, 2519, 2521, 2531, 2541, and 2599) is October 15, 1996. For facilities with SIC codes 2434 and 5712, the due date was February 29, 1996.

AIR QUALITY FEES

Every facility that is subject to the NESHAP for Wood Furniture Manufacturing Operations must pay an annual air quality fee. Under the fee program, a facility that is a major source is required to pay a facility charge of \$2,500 or \$1,000 (depending on if it is a Category I or Category II facility, respectively) plus an emissions charge of \$25 per ton of air contaminants emitted. A Category II facility is a major source that exceeds the HAP emission thresholds (10 tons per year of one HAP, 25 tons per year of a combination of HAPs) and a Category I facility is a major source that exceeds any of the other regulated air contaminant emission thresholds (100 tons per year of any regulated air contaminant).

Once a facility is subject to a NESHAP, it will always be subject to the standard. For example, if a facility is subject to the NESHAP but then reduces its emissions to below the major source thresholds, it still must comply with all the requirements of the standard. In other words,

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once a facility is subject to the NESHAP as a major source, it will always be subject to the NESHAP and be required to pay the annual air quality fees.

WHY SHOULD WOOD FURNITURE MANUFACTURING FACILITIES COMPLY?

Compliance with the NESHAP final rule will reduce the public's and worker's exposure to hazardous air pollutants, and will keep wood furniture manufacturers operating within the law. The CAAA include some strong enforcement provisions with both civil and criminal sanctions for businesses that are in violation of the law.

WHERE TO GO FOR ADDITIONAL INFORMATION

Copies of the Federal Register notice, as well as a list of HAPs and VHAPs can be obtained from the Clean Air Assistance Program. If you have any questions regarding this regulation, please contact any of the following:

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| Rebecca Wiedeman Michigan Department of Environmental Quality Environmental Assistance Division Clean Air Assistance Program PO Box 30457 Lansing, MI 48909-7957 (517) 335-2397 | Denise Plafcan OR Larry Schultz Michigan Department of Environmental Quality Air Quality Division 6th Floor, State Building 350 Ottawa St., NW Grand Rapids, MI 49503-7760 (616)456-5071 |
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GLOSSARY

The following terms are used frequently throughout this fact sheet are found in boldface print:

Adhesive: Any chemical substance that is applied for the purpose of bonding two surfaces together other than by mechanical means. For this rule, adhesives are not considered to be coatings or finishing materials. Products used on humans and animals, adhesive tape, contact paper, or any other product with an adhesive incorporated onto or in an inert substrate shall not be considered adhesives under this rule.

Aerosol adhesive: An adhesive that is dispensed from a pressurized container as a suspension of fine solid or liquid particles in gas.

Area source: Any stationary source of hazardous air pollutants that is not a major source.

As applied: The HAP and solids content of the coating or contact adhesive that is actually used for coating or gluing the substrate. It includes the contribution of materials used for in-house dilution of the coating or contact adhesive.

Basecoat: A coat of colored material, usually opaque, that is applied before graining inks, glazing coats, or other opaque finishing materials, and is usually topcoated for protection.

Certified product data sheet (CPDS): Documentation furnished by coating or adhesive suppliers or an outside laboratory that provides the HAP content of a finishing material, contact adhesive, or solvent, by percent weight; the solids content of a finishing material or contact adhesive by percent weight; and the density. Therefore, the reportable HAP content should represent the maximum aggregate emission potential of the finishing material, adhesive, or solvent in concentrations greater than or equal to 1% by weight or 0.1 % for HAPs that are carcinogens.

Cleaning operations: Operations in which organic solvent is used to remove coating materials or adhesives from equipment used in wood furniture manufacturing operations.

Closed containers: A container that is closed unless an operator is actively engaged in activities such as emptying or filling the container.

Compliant coating/contact adhesive: A finishing material, contact adhesive or strippable booth coating that meets the emission limits specified in *Table 2* of this fact sheet.

Contact adhesive: An adhesive that is applied to two substrates, dried, and mated under only enough pressure to result in good contact. The bond is immediate and sufficiently strong to hold pieces together without further clamping, pressure, or airing.

Continuous coater: A finishing system that continuously applies finishing materials onto furniture parts moving along a conveyor. Finishing materials that are not transferred to the part are recycled to a reservoir. Several types of application methods can be used with a continuous coater including spraying, curtain coating, roll coating, dip coating, and flow coating.

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Conventional air spray: A spray coating method in which the coating is atomized by mixing it with compressed air and applied at an air pressure greater than 10 pounds per square inch (gauge) at the point of atomization. Airless and air assisted airless spray technologies are not conventional air spray because the coating is not atomized by mixing it with compressed air. Electrostatic spray technology is also not considered conventional air spray because an electrostatic charge is employed to attract the coating to the workpiece.

Enamel: A coat of colored material, usually opaque, that is applied as a protective topcoat over a basecoat, primer, or previously applied enamel coats. In some cases, another finishing material may be applied as a topcoat over the enamel.

Existing source: Source constructed or reconstructed on or before December 6, 1994.

Finishing material: A coating used in the wood furniture industry. Such materials include, but are not limited to, stains, basecoats, washcoats, enamels, sealers, and topcoats.

Foam adhesive: A contact adhesive used for gluing foam to fabric, foam to foam, and fabric to wood.

Incidental wood furniture manufacturer: A major source that is primarily engaged in the manufacture of products other than wood furniture or wood furniture components, and that uses no more than 100 gallons per month of finishing material or adhesives in the manufacture of wood furniture or wood furniture components.

Major source: Any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit, considering controls, 10 tons per year or more of any hazardous air pollutant (HAP) or 25 tons per year or more of any combination of HAPs.

New source: Source constructed or reconstructed after December 6, 1994.

Reconstructed: Replacement of components of an affected or previously unaffected source to an extent that the fixed capital cost of the new components exceeds 50% of the fixed capital cost that would be required to construct a comparable new source, and it is technologically and economically feasible for the reconstructed source to meet the requirements of the standard. The costs associated with the purchase and installation of air pollution control equipment are not considered in determining whether the facility has been reconstructed, unless the control equipment is required as part of the process. Additionally, the costs of retrofitting and replacement of equipment that is installed specifically to comply with this standard are not considered reconstruction costs.

Sealer: A finishing material used to seal the pores of a wood substrate before additional coats of finishing material are applied. Special purpose finishing materials that are used in some finishing systems to optimize aesthetics are not sealers.

Stain: Any color coat having a solids content by weight of no more than 8% that is applied in single or multiple coats directly to the substrate. It includes, but is not limited to nongrain raising stains, equalizer stains, prestains, sap stains, body stains, no-wipe stains, penetrating stains, and toners.

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Strippable spray booth material: A coating that: (1) is applied to a spray booth wall to provide a protective film to receive overspray during finishing operations; (2) is subsequently peeled off and disposed of; and (3) by achieving (1) and (2), reduces or eliminates the need to use organic solvents to clean spray booth walls.

Thinner: A volatile liquid that is used to dilute coatings or contact adhesives (to reduce viscosity, color strength, and solids, or to modify drying conditions).

Topcoat: The last film-building finishing material that is applied in a finishing system.

Washcoat: A transparent special purpose finishing material having a solids content by weight of 12% or less. Washcoats are applied over initial stains to protect, control color, and to stiffen the wood fibers in order to aid sanding.

Washoff operations: Those operations in which organic solvent is used to remove coating from wood furniture or a wood furniture component.

Wood furniture: Any product made of wood, a wood product such as rattan or wicker, or an engineered wood product such as particleboard that is manufactured under any of the following standard industrial classification (SIC) codes: 2434, 2511, 2512, 2517, 2519, 2521, 2531, 2541, 2599, or 5712.

Wood furniture component: Any part that is used in the manufacture of wood furniture. Examples include, but are not limited to, drawer sides, cabinet doors, seat cushions, and laminated tops.

ACRONYMS

| | | |
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| AQD | | Air Quality Division of MDEQ |
| CAA | | Clean Air Act |
| CAAA | | Clean Air Act Amendments of 1990 |
| CPDS | ..... | Certified Product Data Sheets |
| CFR | ..... | Code of Federal Regulations |
| EPA | ..... | Environmental Protection Agency |
| HAPs | ..... | Hazardous Air Pollutants |
| MDEQ | ..... | Michigan Department of Environmental Quality |
| NESHAP | ..... | National Emission Standards for Hazardous Air Pollutants |
| PTE | ..... | Potential to Emit |
| SCC | ..... | Source Classification Code |
| SIC | ..... | Standard Industrial Classification |
| VHAPs | ..... | Volatile Hazardous Air Pollutants |
| VOCs | ..... | Volatile Organic Compounds |